

DEVELOPMENT OF SERUM 19A FOLLOWING INOCULATION
OF TYPE *PASTEBURELLA MULTOCIDA*
TYPE 32 IN WHITE RATS

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**DEVELOPMENT OF SERUM IGA FOLLOWING INOCULATION OF
PASTEURELLA MULTOCIDA TYPE B2 IN WHITE RATS**

By

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PROJEK PENYELIDIKAN I DAN II**

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk: DEVELOPMENT OF SERUM IGA FOLLOWING INOCULATION OF *PASTEURELLA MULTOCIDA* TYPE B2 IN WHITE RATS, oleh Mior Faizal Affandy Bin Zaman, no. matrik: UK 7920 telah diperiksa dan semua pembedaan yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan Sains Biologi sebagai memenuhi sebahagian daripada keperluan memperoleh ijazah Sarjana Muda Sains (Sains Biologi), Fakulti Sains dan Teknologi, Kolej Universiti Sains dan Teknologi Malaysia.

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LIST OF ABBREVIATIONS

μL	Micron liter
HS	Hemorrhagic Septicemia
g/ml	gram per milliliter
HAS	Human serum albumin
TMB	Tetrametilbenzine
ELISA	Enzyme Linked Immunosorbant Assay
>	More than
<	Less than
IgA	Immunoglobulin A
IgD	Immunoglobulin D
IgE	Immunoglobulin E
IgG	Immunoglobulin G
IgM	Immunoglobulin M
$^{\circ}\text{C}$	Degree Celcius
ml	Milliliter
rpm	Rotation Per Minute
BHI	Brain Heart Infusion
%	percent

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ABSTRACT

The aim in the study of development of serum IgA following inoculation of dust preparation of *Pasteurella multocida* type B2 in white rats is to determine the level of serum IgA in white rats after inoculation of lyophilized crude *P. multocida* B2. 20 clinically healthy Sprague Dowley (*Rattus norvegicus*) were divided into two groups where group one was for control (untreated) and group two was administrated intranasally with lyophilized crude. The experimental began at day 14 on pre-treatment before going to the treatment day where the serum were taken from both group on day zero, seven ,14 and 21 while the lyophilized crude were administrated in group two on day zero and 14. The serum was collected and the level of IgA was estimated with Enzyme-linked Immunosorbant Assay machine (ELISA). The result shows that the level of serum IgA was significantly higher ($p < 0.05$) in group two with 0.08 in average than control (untreated) with 0.06 in average. By using T-test, the significant level was 0.045. There is no significant difference among individuals in both groups. The level of serum IgA in white rats is according to the immune response which has primary response and secondary response. The level of serum IgA or mucosal antibody was higher in white rats after administration with lyophilized crude.

TINDAKBALAS SERUM IgA SELEPAS INOKULASI DENGAN SERBUK
Pasteurella multocida YANG TIDAK DITAPIS PADA TIKUS PUTIH

ABSTRAK

Matlamat kajian perkembangan serum IgA selepas inokulasi dengan serbuk *Pasteurella multocida* yang tidak ditapis pada tikus putih adalah untuk mengetahui paras serum IgA selepas diinokulasi dengan serbuk tersebut. 20 ekor tikus putih (*Rattus novogicus*) dari baka Sprague Dowley yang sihat telah dibahagi kepada dua kumpulan iaitu kumpulan pertama untuk tikus yang tidak diberi apa-apa rawatan dan kumpulan dua untuk tikus yang diinokulasi dengan serbuk *Pasteurella multocida* yang tidak ditapis. Eksperimen telah bermula pada hari ke 14 pada pra-rawatan sebelum bermula pada rawatan sebenar di mana serum telah diambil dari kedua-dua kumpulan pada hari kosong, tujuh, 14 dan 21 manakala serbuk *Pasteurella multocida* yang tidak ditapis telah diinokulasi pada kumpulan dua pada hari kosong dan hari empat belas. Serum telah dikumpul dan diuji pada mesin ELISA untuk mengetahui nilai bacaan. Keputusannya ialah paras serum IgA adalah lebih tinggi pada kumpulan dua dengan bacaan purata 0.08 dan 0.06 pada kumpulan pertama. Melalui ujian T, bacaan mengandungi perbezaan yang ketara dengan nilai 0.045. Tiada perbezaan yang ketara diantara individu pada kedua-dua kumpulan. Paras IgA dalam tikus putih mengikut tindakbalas imun yang mana mengandungi tindakbalas primer dan tindakbalas sekunder. Paras serum IgA atau antibodi mukus adalah lebih tinggi pada tikus putih yang telah diinokulasi dengan serbuk *Pasteurella multocida* yang tidak ditapis.